

The lowest temperature reported by a regular station of the Weather Bureau was -34 , at Saint Vincent, Minn., on the 23d. The minimum temperature was below -20 over northern Minnesota, North Dakota, and on the northeast slope of the Rocky Mountains; it was below -10 in northern New Hampshire and northern Vermont, and north of a line traced from western Upper Michigan to Chicago, Ill., thence to southern Colorado, and thence northwestward to extreme western Montana. The line of zero temperature is traced from the Massachusetts coast, over the lower lake region, thence to Oklahoma, thence over northern New Mexico and Utah, and thence northward over Idaho. At Key West, Fla., the minimum temperature was 54 .

LIMITS OF FREEZING WEATHER.

The southern limit of freezing weather is shown on Chart V by a line crossing the Florida Peninsula north of Titusville and Tampa. The western limit of freezing weather is shown by a line traced just inside the California coast line south of the 40th parallel.

RANGES OF TEMPERATURE.

The greatest daily ranges of temperature are shown in the table of miscellaneous meteorological data. The greatest monthly range of temperature occurred over western Missouri and southeastern Colorado, where it exceeded 80 . From the west-central states the monthly ranges decreased to less than 40 over northern Lower Michigan, and increased thence eastward to more than 45 on the south New England coast. The monthly range decreased southeastward to less than 30 over extreme southern Florida, southward to less than 60 on the immediate Gulf coast, and westward to less than 30 at points along the immediate middle and north Pacific coasts.

PERIODS OF LOW TEMPERATURE.

From the 1st to the 3d a cold wave advanced from Utah and southern Colorado to the Mississippi Valley, with temperature 12 to 18 below zero in the British Northwest Territory on the 2d and 3d. This cold wave did not reach the Atlantic coast states. From the 5th to the 9th a cold wave advanced from the northeast slope of the Rocky Mountains to the south Atlantic states. From the 8th to 11th a cold wave advanced from the Saskatchewan Valley to the middle Atlantic and New England states. Attending the advance of this cold wave the temperature fell 40 to 50 over northern North Dakota, and reached -20 at Bismarck, N. Dak., on the 9th. On the 10th the line of freezing weather reached Arkansas, and on the 12th freezing weather was reported in northern South Carolina.

From the 18th to the 20th a cold wave advanced from the extreme northwest to the Gulf States and New England. On

the 19th the temperature reached -16 at Saint Vincent, Minn., and the line of zero temperature reached Keokuk, Iowa. On the 21st the temperature fell to freezing over the north part of the Gulf States. From the 20th to the 22d a severe cold wave overspread the Northwest. On the 21st the temperature fell to -30 at Swift Current, N. W. T., and was below zero in South Dakota. On the 22d a reading of -24 was noted at Moorhead, Minn.

A severe cold wave advanced from the Northwest to the Gulf and south Atlantic coasts from the 25th to the 27th. On the 25th the temperature reached -32 at Saint Vincent, Minn., and fell to zero in northern Missouri. On the 26th the line of zero temperature reached Arkansas and freezing weather extended to the Gulf coast. On the 27th the line of freezing weather reached northern Florida. During the 30th and 31st a cold wave advanced from the Northwest to the west Gulf coast.

FROST.

Frost injurious to vegetation was reported as follows: On the 9th heavy frost injured tender vegetation in the Mission Valley, near San Diego, Cal. A report from Los Angeles, Cal., dated the 10th stated that frost injured tender plants and vines in exposed places. At Fall Brook, Cal., frost damaged tomatoes on the 12th. On the 27th, at Corpus Christi, Tex., heavy frost killed vegetation, and ice three-fourths of an inch in thickness formed.

Heavy frost was reported generally over interior and northern parts of the Florida Peninsula on the 29th. Timely warning was given and much loss was avoided by covering plants and the protection afforded by smudge fires. At Deland, Fla., the temperature fell to 28 and was below the freezing point 7 hours, one and one-half hour of which was after sunrise; orange trees were slightly nipped in that locality. From the 26th to the 29th the weather was exceptionally cold over the Gulf States. In Louisiana tender vegetation was killed, sugar cane still standing was frozen, and orange trees in southern parishes were slightly nipped.

The first light frost of the season was reported on the 6th at Gila Bend, Ariz., and San Diego and San Francisco, Cal.

The first heavy frost of the season was reported as follows: 6th, Tucson, Walnut Ranch, and Wilgus, Ariz. 7th, El Paso, Tex. 8th, Astoria, Oregon; East Sound, Wash. 10th, Boerne, Brownwood, and Burnet, Tex. 12th, Fall Brook, Cal. 16th, Farleys Camp, Ariz.; Duarte, Cal. 17th, Fort Canby, Wash. 20th, Red Rock, Ariz. 21st, Napa, Cal. 23d, Pensacola, Fla. 26th, Emilie, La.; Brenham and Galveston, Tex. 27th, Corpus Christi, Cuero, and Flower Bluff, Tex. 28th, Eustis, Fla. 29th, Federal Point, Homeland, Jupiter, Moseley Hall, Micco, Tampa, and Titusville, Fla.

PRECIPITATION (expressed in inches and hundredths).

The distribution of precipitation over the United States and Canada for December, 1892, as determined from reports of more than 2,000 stations, is exhibited on Chart III. In the table of miscellaneous meteorological data the total precipitation and the departure from the normal are given for regular stations of the Weather Bureau. The figures opposite the names of the geographical districts in the columns for precipitation and departure from the normal show, respectively, the averages for the several districts. The normal for any district may be found by adding the departure to the current mean when the precipitation is below the normal and subtracting when above.

In December the monthly precipitation is usually greatest on the north Pacific coast, where it exceeds 10.00 ; the normal amount exceeds 8.00 along the Pacific coast north of the

38th parallel, in parts of northeastern California, and in a small area in northeastern Louisiana; and exceeds 4.00 from the middle and east Gulf coasts to the middle Ohio valley, along the immediate Atlantic coast from North Carolina to southern New England, and over Nova Scotia and southeastern Maine. Except in parts of the northern plateau region, the monthly precipitation is less than 1.00 over the greater part of the Rocky Mountain and plateau regions, and thence over Kansas, Nebraska, the Dakotas, and Minnesota.

In December, 1892, the monthly precipitation exceeded 10.00 over the greater part of northern California, and along the Oregon and Washington coasts. The monthly amount was also in excess of 10.00 from western Tennessee over eastern and southern Arkansas, and in the vicinity of Pales-

tine, Tex. Along the middle and southern California coasts, in the upper valley of the Columbia River, in the mountains of Colorado, and over the greater part of the middle and west Gulf states the monthly precipitation was 4.00 to 6.00. Generally over the middle and southern plateau regions and from the Rocky Mountains over the Missouri and extreme upper Mississippi valleys, the monthly precipitation was less than 1.00. At stations in the Colorado Valley no precipitation was reported.

DEPARTURE FROM NORMAL PRECIPITATION.

The monthly precipitation was generally deficient, except over the Rocky Mountain and plateau regions, in the South-western States, and in the central valleys of California. The most marked deficiency in precipitation was noted generally in New England, where it was more than 2.00. The deficiency also exceeded 2.00 in the interior of the south Atlantic states, and along the immediate north Pacific coast. The greatest excess in precipitation occurred over the interior of the west Gulf states, where the rainfall was 4.00 to 8.00 greater than the December average.

The following table shows for certain stations, as reported by voluntary observers, (1) the average precipitation for December for a series of years; (2) the length of record during which the observations have been taken and from which the average has been computed; (3) the total precipitation for December, 1892; (4) the departure of the current month from the average; (5) and the extremes for December during the period of observation and the years of occurrence:

State and station.	(1) Average for the month of Dec.	(2) Length of record.	(3) Total for Dec., 1892.	(4) Departure from average.	(5) Extremes for December.			
					Greatest.		Least.	
					Am't.	Year.	Am't.	Year.
<i>Arizona.</i>	<i>Inches.</i>	<i>Years.</i>	<i>Inches.</i>	<i>Inches.</i>	<i>Inches.</i>		<i>Inches.</i>	
Fort Apache	1.71	16	0.69	- 1.02	5.52	1884	0.08	1882
Fort Mohave	1.37	19			11.17	1889	0.00	*
Whipple Barracks	1.85	20	0.61	- 1.24	1889	0.00		*
<i>Arkansas.</i>								
Keesees Ferry	3.29	11	3.17	- 0.12	11.37	1884	1.15	1889
<i>California.</i>								
Fort Bidwell	3.39	19	2.64	- 0.75	6.60	1879	0.13	1874
Riverside	2.02	12	1.58	- 0.44	6.87	1889	0.17	1886
<i>Colorado.</i>								
Las Animas	0.41	10	0.50	+ 0.09	1.68	1883	0.00	1889
<i>Florida.</i>								
Merritts Island	2.52	14	1.66	- 0.86	8.55	1888	0.00	1889
<i>Georgia.</i>								
Forsyth	4.37	18	4.44	+ 0.07	7.56	1887	0.79	1889
<i>Idaho.</i>								
Boise Barracks	2.24	19	0.94	- 1.30	5.96	1871	0.01	1877
Fort Sherman	3.18	9	4.80	+ 1.62	5.85	1889	1.48	1885
<i>Indiana.</i>								
Lafayette	2.60	12	1.55	- 1.05	6.27	1884	0.23	1890
<i>Indian Territory.</i>								
Fort Supply	0.66	12	1.80	+ 1.14	3.19	1885	0.00	1886, 1889
<i>Iowa.</i>								
Cresco	1.42	21	1.22	- 0.20	3.44	1891	0.30	1874
<i>Kansas.</i>								
Independence	2.17	20	3.00	+ 0.83	5.17	1879	0.53	1889
Salina	0.67	10	2.52	+ 1.85	2.52	1892	T.	1889, 1890
<i>Louisiana.</i>								
Grand Coteau	5.32	9	4.63	- 0.69	14.43	1884	2.27	1890
<i>Maine.</i>								
Orono	3.99	22	2.26	- 1.73	7.92	1878	1.50	1875
<i>Maryland.</i>								
Cumberland	2.25	21	1.73	- 0.52	4.50	1881	0.70	1870
<i>Michigan.</i>								
Kalamasoo	2.81	16	1.97	- 0.84	7.14	1884	1.35	1890
<i>Missouri.</i>								
Sedalia	1.96	14	2.80	+ 0.84	4.77	1884	0.53	1886
<i>Montana.</i>								
Fort Custer	0.84	13			1.87	1883	0.09	1885
<i>Nebraska.</i>								
Fort Robinson	0.71	9	0.50	- 0.21	1.97	1883	0.01	1890
Genoa (near)	0.83	17	0.76	- 0.07	1.75	1883	0.00	1875, 1890
<i>Nevada.</i>								
Browns	0.50	20	0.81	+ 0.31	2.01	1871	0.00	1876
Carson City	2.23	15	1.89	- 0.34	5.43	1891	0.00	1876
<i>New Hampshire.</i>								
Hanover	2.57	21	0.96	- 1.61	4.69	1878	0.78	1875
<i>New Mexico.</i>								
Deming	0.37	8	0.60	+ 0.23	1.35	1884	0.00	1886, 1889
Fort Wingate	0.94	21	0.70	- 0.24	2.29	1871	0.10	1886
<i>New York.</i>								
Cooperstown	2.69	21	1.53	- 1.16	6.02	1881	0.97	1877
Plattsburg Barracks	1.89	21	1.44	- 0.45	3.33	1878	0.17	1886
<i>North Carolina.</i>								
Lenoir	3.72	18	1.50	- 2.22	8.70	1877	0.50	1889

Departures from average precipitation—Continued.

State and station.	(1) Average for the month of Dec.	(2) Length of record.	(3) Total for Dec., 1892.	(4) Departure from average.	(5) Extremes for December.			
					Greatest.		Least.	
					Am't.	Year.	Am't.	Year.
<i>Oklahoma.</i>	<i>Inches.</i>	<i>Years.</i>	<i>Inches.</i>	<i>Inches.</i>	<i>Inches.</i>		<i>Inches.</i>	
Fort Reno	1.09	9	4.40	+ 3.31	4.40	1892	0.00	1886
Fort Sill	1.60	20	2.98	+ 1.38	4.07	1874	0.00	1889
<i>Oregon.</i>								
Bandon	11.37	14	17.17	+ 5.80	17.17	1892	4.93	1878
<i>Pennsylvania.</i>								
Dyberry	2.80	21	1.76	- 1.04	5.29	1890	1.20	1874
Grampian	3.74	15	1.36	- 2.38	5.15	1891	1.36	1892
Wellsboro	4.65	13	0.40	- 4.25	9.57	1881	0.40	1892
<i>South Carolina.</i>								
Statesburg	2.92	11	1.76	- 1.16	5.87	1884	0.75	1889
<i>South Dakota.</i>								
Fort Sully	0.47	21	0.72	+ 0.25	2.48	1877	0.00	1881
<i>Texas.</i>								
Austin	2.85	19	8.49	+ 5.64	9.00	1891	0.19	1886
Silver Falls	0.61	5	0.92	+ 0.31	2.03	1891	0.00	1889
<i>Utah.</i>								
Terrace	0.76	19	0.50	- 0.26	2.12	1877	0.00	1874, 1878
<i>Vermont.</i>								
Stratford	3.27	19	1.55	- 1.72	5.90	1878	0.15	1875
<i>Virginia.</i>								
Dale Enterprise	2.80	12	2.71	- 0.09	6.81	1881	0.13	1882
<i>Washington.</i>								
Fort Townsend	2.77	18	3.42	+ 0.65	5.34	1891	1.14	1879
<i>West Virginia.</i>								
Parkersburg	2.09	7	1.73	- 0.36	4.20	1890	0.02	1885
<i>Wisconsin.</i>								
Embarrass	2.69	21	1.17	- 1.52	5.80	1887	0.45	1878
Madison	1.98	20	2.19	+ 0.21	5.73	1884	0.45	1874
<i>Wyoming.</i>								
Fort Washakie	0.43	9	1.04	+ 0.61	2.29	1886	0.00	1890

* Frequently.

Considered by districts the average percentage of the normal in districts where the precipitation was in excess was about as follows: middle-eastern slope of the Rocky Mountains, 186; west Gulf states, 179; southeast slope of the Rocky Mountains, 151; middle Pacific coast, 125; northeast slope of the Rocky Mountains and Ohio Valley and Tennessee, 112; Missouri Valley and middle plateau region, 108. In districts where the precipitation was deficient the percentage of the normal was about as follows: Key West, Fla., 46; New England, 47; lower lake region, 52; southern plateau, 58; south Atlantic states, 59; middle Atlantic states, 64; upper lake region, 68; south Pacific coast and extreme northwest, 71; north Pacific coast, 86; east Gulf states, 88; upper Mississippi valley, 95. Over the northern plateau region the monthly precipitation was about normal.

YEARS OF GREATEST PRECIPITATION FOR DECEMBER.

At Memphis, Tenn., Palestine, Tex., Fort Reno, Okla., Salina, Kans., Cheyenne, Wyo., and Bandon, Oregon, the precipitation for the current month was the greatest noted for December during the respective periods of observation. The greatest precipitation for December occurred generally over the plateau regions in 1889; in the middle and lower Mississippi and lower Ohio valleys and the upper lake region in 1884; on the northeast slope of the Rocky Mountains and in the central valleys of California in 1880; in the middle Ohio valley and Tennessee in 1879; over the greater part of New York and New England in 1878; and along the Carolina coast in 1877.

YEARS OF LEAST PRECIPITATION FOR DECEMBER.

At Grampian and Wellsboro, Pa., Indianapolis, Ind., and Saint Vincent, Minn., the precipitation for the current month was the least reported for December during the respective periods of observation. The least precipitation for December occurred generally in the Gulf and middle and south Atlantic states, Kentucky, and Tennessee in 1889; in the lower lake region in 1874; and in the Lake Michigan region in 1872.

EXCESSIVE PRECIPITATION.

The following tables show, by states, the number of stations reporting monthly precipitation to equal or exceed 10.00; pre-

precipitation to equal or exceed 2.50 in 24 hours; and precipitation to equal or exceed 1.00 in 1 hour in December, 1892:

Monthly precipitation to equal or exceed 10.00.

State.	Number of stations.	State.	Number of stations.
California	35	Washington	3
Arkansas	16	Texas	2
Oregon	6	Colorado	1
Tennessee	3	Louisiana	1

Precipitation to equal or exceed 2.50 in 24 hours.

State.	Number of stations.	Dates.	State.	Number of stations.	Dates.
California.....	30	1, 2, 2-3, 3, 21, 22, 22-23, 22-24, 23, 23-24, 23-25, 24, 25, 27.	Oregon.....	5	20-21, 21, 21-22, 26.
Arkansas.....	26	11-12, 12, 12-13, 13, 15, 15-16, 16, 30, 30-31.	Kentucky.....	4	12-13, 13, 30-31.
Texas.....	13	6, 11-12, 12, 12-13, 30, 30-31.	Mississippi.....	3	12-13, 13.
Louisiana.....	7	12, 12-13, 13, 16, 31.	Florida.....	2	11, 17.
Tennessee.....	7	12, 12-13, 14, 16, 19, 30.	Indian Territory.....	2	6-11, 12.
			Missouri.....	2	6, 30-31.
			Oklahoma.....	2	5-6, 6.
			Washington.....	2	20-21.
			Alabama.....	1	16-17.
			Colorado.....	1	5-6, 15-16, 20-21.

Precipitation to equal or exceed 1.00 in 1 hour.

Louisiana.....	1	6.	Mississippi.....	1	7.
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Table of excessive precipitation, December, 1892.

State and station.	Monthly rainfall to inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall 1 inch, or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
<i>Alabama.</i>	<i>Inches.</i>	<i>Inches.</i>		<i>Inches.</i>	<i>h. m.</i>	
Mobile	10.30	3.50	16-17			
<i>Arkansas.</i>						
Arkadelphia	10.30	3.50	13			
Arkansas City	13.44	4.00	12			
Brinkley	11.73	4.93	12			
Camden a	12.51	2.80	15-16			
Camden b	12.51	5.05	12			
Do	12.51	2.85	15-16			
Dallas	10.30	2.90	30			
Dardanelle	10.30	3.00	30			
Forrest	10.30	3.00	12-13			
Fulton	10.30	3.10	13			
Gaines Landing	11.69	3.35	12			
Helena a	11.69	3.97	13			
Do	11.69	3.53	16			
Helena b	11.73	3.33	13			
Do	11.73	3.18	16			
Hope	11.40	4.05	12			
Hot Springs	10.30	2.52	12			
Little Rock	10.30	2.79	12-13			
Lonoke	10.30	3.50	12			
Madding	16.44	7.06	12			
Do	16.44	3.63	15			
New Gascony	15.04	6.66	12-13			
Do	15.04	3.53	15-16			
Newport a	10.76	3.50	30-31			
Osceola	10.76	3.32	12-13			
Do	10.76	5.06	30-31			
Pine Bluff	13.35	6.60	12-13			
Do	13.35	3.12	16			
Russellville	13.35	2.50	12			
Searcy	13.03	5.33	12-13			
Stuttgart	13.32	5.61	12-13			
Do	13.32	2.76	16			
Texarkana	10.22	2.70	11-12			
Washington b	11.40	4.05	12-13			
<i>California.</i>						
Anderson	21.11	3.00	25			
Arcata	10.79	2.80	22			
Berkeley	11.20	2.96	2			
Boulder Creek	10.79					
Callistoga	11.20					
Cisco	16.77	10.10	23-24			
Cloverdale	16.95					
Colfax	19.51					
Delta	2.92		23-24			
Duarte	14.03					
Dunsmuir	24.98	7.08	2-3			
Edmonton		2.74	21			
Do		11.71	23-25			
Do						

Table of excessive precipitation—Continued.

State and station.	Monthly rainfall to inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall of 1 inch, or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
<i>California—Continued.</i>	<i>Inches.</i>	<i>Inches.</i>		<i>Inches.</i>	<i>h. m.</i>	
Eldorado	10.33					
Emigrant Gap	19.97					
Eureka		2.73	22-23			
Felton	15.15					
Fouts Springs	10.96	6.44	22-24			
Georgetown	15.76	2.65	1			
Do		4.14	3			
Do		2.78	24			
Glen Ellen	14.96					
Glendora		2.63	24			
Grass Valley a	11.22	2.57	3			
Do		2.67	24			
Grass Valley b	11.91	3.06	3			
Do		3.28	24			
Hydesville	10.66	6.00	22-23			
Iowa Hill	11.88	3.00	3			
Jolon		3.20	23			
Kennedy Gold Mine		3.28	3			
Laurel	22.66					
Los Gatos a	14.88					
Los Gatos b	14.95	2.85	3			
Do		8.46	23-24			
Middletown	14.77	7.57	23-24			
Napa City b		3.41	3			
Nevada City	14.19	3.10	3			
Do		4.10	24			
New Almaden	13.90					
Nordhoff		5.17	23-25			
Palermo		2.75	2-3			
Placerville a	15.48					
Placerville b	10.53	2.94	3			
Redding a	14.27					
Redding b	10.79					
Rumsey	11.37					
Santa Barbara a		3.62	24			
Santa Cruz b		3.00	23			
Saticoy		3.10	23			
Shasta	17.46	8.75	22-24			
Sims	26.92					
Sonoma		2.68	24			
Sutter Creek		2.52	3			
Tehama	12.96					
Towles	17.33					
Upper Mattole	24.48	16.93	22-24			
Do		3.39	27			
Winters	13.68					
<i>Colorado.</i>						
Pikes Peak	20.51	7.39	5-6			
Do		3.38	15-16			
Do		2.55	20-21			
<i>Florida.</i>						
Jupiter		3.00	11			
Tallahassee		3.40	17			
<i>Indian Territory.</i>						
Lehigh		3.25	6			
South McAlester		2.55	11-12			
<i>Kentucky.</i>						
Bowling Green		3.05	13			
Do		2.80	30-31			
Franklin		2.60	12-13			
Matlock		3.22	12-13			
Springfield		2.50	12-13			
<i>Louisiana.</i>						
Davis		3.00	31			
Farmerville		2.58	31			
Homer		3.75	12	1.02	0 30	6
Monroe		3.01	12-13			
Do		3.28	31			
North Louisiana Experiment Station		3.42	13			
Plain Dealing	13.35	4.50	12			
Do		4.00	16			
Shell Beach		4.70	31			
<i>Mississippi.</i>						
Batesville		2.80	12-13			
Greenville		2.64	12-13			
Washington				1.01	1 00	7
Water Valley		3.24	13			
<i>Missouri.</i>						
Carthage		2.69	6			
Gayoso		3.08	30-31			
<i>Oklahoma Territory.</i>						
Oklahoma City		2.78	5-6			
Sac and Fox Agency		3.20	6			
<i>Oregon.</i>						
Astoria	10.25					
Bandon	17.17	6.32	21-22			
Eugene		2.70	21			
Gardiner		6.07	20-21			
Glenora	17.83	2.70	21			
Do		4.75	26			
Hood River (near)	10.94					
Langlois	13.56					
<i>Tennessee.</i>						
Andersonville		2.60	19			
Clarksville		3.24	13			
Covington b	12.96	4.75	12			
Jackson	11.91	4.00	13			
Do		4.00	30			
Memphis	11.95	4.50	12-13			
Savannah		3.25	16			

Table of excessive precipitation—Continued.

State and station.	Monthly rainfall to inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall of 1 inch, or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
<i>Tennessee—Continued.</i>						
Waynesboro	<i>Inches.</i>	<i>Inches.</i>		<i>Inches</i>	<i>h. m.</i>	
<i>Texas.</i>						
Brenham		2.75	6			
Camp Pena Colorado		2.50	12			
College Station	11-03	3.55	12			
Corsicana b		2.58	30-31			
Duval		2.60	12			
Gainesville		2.50	12			
Mountain Spring		3.86	11-12			
New Braunfels		3.75	12-13			
Palestine	11-04	2.76	6			
Do		3.24	30-31			
Paris		2.73	12			
Round Rock		3.08	11-12			
Sulphur Springs		3.06	6			
Temple		2.50	30			
<i>Washington.</i>						
East Clallam	10.46					
Neah Bay	12.02					
Madrone		3.00	20-21			
Olympia	10.76	5.98	20-22			

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<i>California.</i>						
Fouts Springs	10-25					
Mountain View		3.35	28			
<i>Delaware.</i>						
Seaford		3.13	15			
<i>Maryland.</i>						
Denton		2.60	15			
<i>New York.</i>						
Central Park, New York City		3.19	15-16			
<i>Washington.</i>						
Vashon		2.50	17			

MAXIMUM RAINFALL IN ONE HOUR OR LESS.

The following table is a record of the heaviest rainfall during December, 1892, for periods of five and ten minutes and one hour, as reported by regular stations of the Weather Bureau furnished with self-registering gauges:

Maximum rainfall in one hour or less.

Station.	Maximum fall in—					
	5 min.	Date.	10 min.	Date.	1 hour.	Date.
	Inch.		Inch.		Inch.	
Atlanta, Ga.	0.09	19	0.14	19	0.45	19
Bismarck, N. Dak.						
Boston, Mass.						
Buffalo, N. Y.						
Cincinnati, Ohio	0.05	31	0.06	31	0.15	31
Chicago, Ill.	0.08	13	0.10	13	0.37	13
Cleveland, Ohio						
Denver, Colo.						
Detroit, Mich.						
Dodge City, Kans.						
Duluth, Minn.						
Eastport, Me.	0.01	8	0.02	8	0.13	8
Galveston, Tex.	0.17	7	0.23	7	0.45	7
Indianapolis, Ind.						
Jacksonville, Fla.	0.10	18, 26	0.15	18, 26	0.51	18
Jupiter, Fla.	0.25	11	0.40	11	0.95	11
Kansas City, Mo.						
Key West, Fla.	0.12	27	0.14	27	0.30	27
Marquette, Mich.						
Memphis, Tenn.	0.12	8	0.17	8	0.25	8
Milwaukee, Wis.						
New Orleans, La.	0.11	8	0.17	8	0.25	8
New York, N. Y.						
Norfolk, Va.						
Omaha, Nebr.						
Philadelphia, Pa.	0.07	8	0.10	8	0.17	8
Philadelphia Water Works						
Pittsburg, Pa.						
Portland, Oregon	0.04	26	0.07	26	0.17	26
Saint Louis, Mo.	0.12	6	0.20	6	0.52	6
Saint Paul, Minn.						
Salt Lake City, Utah	0.02	25	0.04	25	0.17	25
San Diego, Cal.	0.01	24	0.02	24	0.10	24
San Francisco, Cal.						
Savannah, Ga.	0.22	17	0.32	8	0.71	17
Tampa, Fla.	0.30	26	0.50	26	0.95	26
Washington, D. C.	0.05	13	0.06	13	0.26	13
Wilmington, N. C.	0.04	14	0.05	14	0.10	14

* Record incomplete on account of snow.
† Self-register out of order.

The following tables show the number of years for which monthly precipitation to equal or exceed 10.00 inches, daily precipitation to equal or exceed 2.50 inches, and hourly precipitation to equal or exceed 1.00 inch has been reported in the several states and territories for December during the last 23 years:

Excessive monthly precipitation.

State.	No. years noted.	State.	No. years noted.
Washington	17	Connecticut	0
California	14	The Dakotas	0
Oregon	11	Delaware	0
Texas	8	District of Columbia	0
North Carolina	6	Idaho	0
Louisiana	6	Illinois	0
Florida	4	Indian Territory	0
Mississippi	3	Iowa	0
Arkansas	2	Kansas	0
Georgia	2	Maine	0
New York	2	Maryland	0
Tennessee	2	Minnesota	0
Alabama	1	Montana	0
Arizona	1	Nebraska	0
Indiana	1	New Mexico	0
Kentucky	1	Ohio	0
Massachusetts	1	Pennsylvania	0
Michigan	1	Rhode Island	0
Missouri	1	South Carolina	0
Nevada	1	Utah	0
New Hampshire	1	Vermont	0
New Jersey	1	West Virginia	0
Virginia	1	Wisconsin	0
Colorado	1	Wyoming	0

Excessive daily precipitation (24 hours).

State.	No. years noted.	State.	No. years noted.
California	15	Michigan	3
Texas	13	New Jersey	3
Louisiana	12	Missouri	3
North Carolina	11	Arizona	2
Georgia	10	Iowa	2
Alabama	10	District of Columbia	2
Florida	10	Connecticut	1
Oregon	10	Delaware	1
Tennessee	10	New Hampshire	1
Mississippi	10	Utah	1
Virginia	10	Vermont	1
Washington	10	Colorado	1
Indiana	7	Indian Territory	1
Illinois	6	The Dakotas	0
Pennsylvania	6	Idaho	0
South Carolina	6	Minnesota	0
Arkansas	5	Montana	0
Kentucky	5	Nebraska	0
Maryland	5	Nevada	0
New York	5	Kentucky	0
Massachusetts	4	Rhode Island	0
Kansas	3	West Virginia	0
Maine	3	Wisconsin	0
		Wyoming	0

Excessive hourly precipitation.

State.	No. years noted.	State.	No. years noted.
Texas	7	Delaware	0
California	6	District of Columbia	0
Louisiana	4	Idaho	0
Tennessee	3	Indian Territory	0
Mississippi	3	Iowa	0
Illinois	2	Kentucky	0
Indiana	2	Maryland	0
Pennsylvania	2	Minnesota	0
Alabama	2	Montana	0
Arkansas	2	Nebraska	0
Michigan	2	Nevada	0
Georgia	1	New Hampshire	0
Kansas	1	New Jersey	0
Massachusetts	1	New Mexico	0
Florida	1	New York	0
Maine	1	North Carolina	0
Missouri	1	Ohio	0
Oregon	1	Rhode Island	0
Virginia	1	South Carolina	0
Washington	1	The Dakotas	0
Wisconsin	1	Utah	0
Arizona	0	Vermont	0
Colorado	0	West Virginia	0
Connecticut	0	Wyoming	0

The following tables give exceptionally heavy monthly, daily, and hourly precipitation reported for December during the last 23 years:

Monthly.

Station and state.	Am't.	Year.	Station and state.	Am't.	Year.
	<i>Inches.</i>			<i>Inches.</i>	
San Andreas, Cal.....	51.05	1871	Georgetown, Cal.....	22.94	1889
Pilarcitos, Cal.....	41.87	1871	Grass Valley, Cal.....	22.69	1888
Felton, Cal.....	34.95	1889	Laurel, Cal.....	22.66	1892
Mount Hamilton, Cal.....	33.84	1884	Neah Bay, Wash.....	22.57	1887
Reeds Camp, Cal.....	32.07	1880	Do.....	22.09	1890
Laurel, Cal.....	31.79	1889	Vacaville, Cal.....	21.85	1880
Emigrant Gap, Cal.....	31.20	1884	Colfax, Cal.....	21.85	1889
Neah Bay, Wash.....	30.70	1886	Pysht, Wash.....	21.61	1886
Upper Mattole, Cal.....	29.36	1889	Fort Stevens, Oregon.....	21.27	1880
Mount Saint Helena, Cal.....	28.91	1880	American Hill, Cal.....	21.22	1889
Summit, Cal.....	28.88	1871	Boulder Creek, Cal.....	21.11	1892
Cisco, Cal.....	28.30	1871	Grass Valley, Cal.....	21.08	1889
Sims, Cal.....	26.92	1892	Iowa Hill, Cal.....	21.04	1889
Crescent City, Cal.....	26.26	1885	San Rafael, Cal.....	20.96	1884
Tatoosh Island, Wash.....	25.84	1886	Emigrant Gap, Cal.....	20.85	1889
Delta, Cal.....	25.83	1889	Los Gatos, Cal.....	20.73	1889
Cisco, Cal.....	25.57	1889	Crescent City, Cal.....	20.58	1889
Do.....	25.05	1884	Dunsmuir, Cal.....	20.58	1889
Edmonton, Cal.....	24.98	1892	Healdsburg, Cal.....	20.42	1871
Upper Mattole, Cal.....	24.48	1892	Point Pleasant, La.....	20.39	1884
Mumford Hill, Cal.....	24.34	1880	Santa Cruz, Cal.....	20.38	1889
Neah Bay, Wash.....	23.91	1891	Portland, Oregon.....	20.14	1882
Colfax, Cal.....	23.60	1884	Tatoosh Island, Wash.....	20.08	1891
Neah Bay, Wash.....	23.22	1880	Cathlamet, Wash.....	20.00	1875

Daily (24 hours).

Station and state.	Amount.	Date.	Station and state.	Amount.	Date.
	<i>Inches.</i>			<i>Inches.</i>	
Upper Mattole, Cal.....	16.93	22-24, 1892	Minden, La.....	6.02	23, 1891
Point Pleasant, La.....	13.50	19, 1882	Fayetteville, N. C.....	6.00	9-10, 1878
Monroe, La.....	12.15	29-30, 1884	Do.....	6.00	20-21, 1878
Edmonton, Cal.....	11.71	23-25, 1892	Clarksville, Tex.....	6.00	31-Jan. 1.
San Rafael, Cal.....	11.45	17-21, 1884			1874-75
Mount Ida, Ark.....	10.35	26-30, 1884	Hydesville, Cal.....	6.00	22-23, 1892
Cloverdale, Cal.....	10.10	23-24, 1892	Olympia, Wash.....	5.98	20-22, 1892
Mount St. Helena, Cal.....	9.04	23-24, 1880	Hallettsville, Tex.....	5.93	11-12, 1891
Shasta, Cal.....	8.75	22-24, 1892	Mount St. Helena, Cal.....	5.79	19-20, 1880
Clarksville, Tex.....	8.50	29-30, 1874	Louisville, Ill.....	5.73	3, 1873
Do.....	8.50	28-29, 1875	New Ulm, Tex.....	5.62	3, 1875
Yaquina L. H., Oregon.....	8.47	5-6, 1887	Stuttgart, Ark.....	5.61	12-13, 1892
Los Gatos, Cal.....	8.46	23-24, 1892	Neah Bay, Wash.....	5.45	16-17, 1887
Point Pleasant, La.....	8.03	28-30, 1881	Fort Barrancas, Fla.....	5.43	5, 1879
College Station, Tex.....	7.78	12-14, 1891	Merritts Island, Fla.....	5.39	17, 1888
Portland, Oregon.....	7.66	12-13, 1882	Fort Barrancas, Fla.....	5.36	3-4, 1877
Middletown, Cal.....	7.57	23-24, 1892	Searcy, Ark.....	5.33	12-13, 1892
Pikes Peak, Colo.....	7.39	5-6, 1892	Fort Barrancas, Fla.....	5.32	20, 1881
Edmonton, Cal.....	7.08	2-3, 1892	Austin, Tex.....	5.31	11-12, 1891
Madding, Ark.....	7.06	12, 1878	Highlands, N. C.....	5.30	20, 1881
Point Pleasant, La.....	7.02	8-9, 1892	Titusville, Fla.....	5.28	17, 1888
New Gascony, Ark.....	6.66	12-13, 1892	Trinity, Ala.....	5.20	4, 1887
Mount St. Helena, Cal.....	6.65	2-3, 1880	Nordhoff, Cal.....	5.17	23-25, 1892
Fort Gaston, Cal.....	6.60	24-25, 1883	Osecola, Ark.....	5.06	30-31, 1892
Pine Bluff, Ark.....	6.60	12-13, 1892	Camden, Ark. (b).....	5.05	12, 1892
Founts Springs, Cal.....	6.44	22-24, 1892	Vicksburg, Miss.....	5.05	18-19, 1872
Mico, Fla.....	6.33	24, 1888	Red Bluff, Cal.....	5.04	19, 1879
Bandon, Oregon.....	6.32	21-22, 1882	Boysd Corners, N. Y.....	5.02	11, 1878
Fort Meade, Fla.....	6.20	17, 1888	Point Pleasant, La.....	5.01	14, 1884
Farmerville, La.....	6.15	5, 1890	Ellsworth, N. C.....	5.00	1-2, 1880
Gardiner, Oregon.....	6.07	20-21, 1892	Melissa, Tex.....	5.00	27-28, 1877

One hour and less.

Station and state.	Amount.	Time.	Date.
	<i>Inches.</i>	<i>h. m.</i>	
Tampa, Fla.....	0.30	0 05	26, 1892
New Orleans, La.....	0.30	0 05	5, 1890
Jupiter, Fla.....	0.25	0 05	11, 1892
Norfolk, Va.....	0.25	0 05	4, 1891
Savannah, Ga.....	0.25	0 05	8, 1890
Galveston, Tex.....	0.20	0 05	24, 1890
Tampa, Fla.....	0.50	0 10	26, 1892
Galveston, Tex.....	1.36	0 20	28, 1871
Wellaboro, Pa.....	1.20	0 20	7, 1884
Winnebago, Ill.....	1.00	0 20	21, 1889

SNOW (in inches and tenths).

Chart V shows the depth of snowfall reported for the month. A heavy fall of snow was reported in Utah on the 5th. On the 6th and 7th heavy snow fell in eastern and central Kansas and central Iowa. A heavy snowstorm visited eastern Kansas and parts of Missouri and Iowa on the 13th. A snow blockade was reported near Dodge City, Kans., on the 19th

and 20th. From the 20th to the 23d heavy snow fell in the north Pacific coast states, blockading railroads. At Olympia, Wash., and Portland, Oregon, about 2 feet of snow fell, and at Port Angeles, Wash., a depth of 12.4 inches was reported.

The evening of the 26th a sleet and snow storm set in over the south Atlantic and east Gulf states and northern Florida. During the 27th and 28th snow fell to a depth of 9.5 at Raleigh, N. C., and from the 26th to the 28th a depth of 19 inches, the heaviest fall since 1857, was noted at Norfolk, Va. At points in northern Florida the snow of the 27th was reported the first since 1857.

The heaviest snowfall for the month, 201, was noted at Pikes Peak, Colo. 40 to 60 fell at points in the mountains of Colorado. 52 fell at Olympia, Wash. At Calumet, Mich., Eden Center, N. Y., and Hood River, Oregon, the monthly snowfall exceeded 40. 20 to 30 fell in extreme northern New England, central New York, north Lower Michigan, northern Upper Michigan, in the Yellowstone Park, Wyo., and over a great part of Washington; over a great part of the interior of New England, New York, and Michigan, in an area extending from Upper Michigan and northern Lower Michigan to northwestern Texas, and generally over the Rocky Mountain and middle and northern plateau regions the monthly snowfall was 10 to 20.

DEPTH OF SNOW ON GROUND ON THE 15TH AND AT THE CLOSE OF THE MONTH.

Chart VI shows the depth of snow reported on the ground on the 15th. In the mountains of northeastern California and western Nevada a depth of 20 to 40 was noted. In Upper Michigan, the interior of Wisconsin, northeastern North Dakota, and in areas in the middle Rocky Mountain region the depth was 10 to 20. Over northern New England and northeastern New York, from Upper Michigan over Kansas, and in the middle and northern Rocky Mountain regions a depth of 5 to 10 was reported.

Chart VII shows the depth of snow reported on the ground at the close of the month. In the northern Rocky Mountain region and northeastern Washington a depth of 20 to 30 was reported. At points in northern New England, northern and western New York, northern Lower Michigan, Upper Michigan, the interior of Wisconsin, in an area extending over central Iowa and central Kansas, and at points in the northern and middle Rocky Mountain regions, northeastern California, and western Nevada 10 or more was noted; and a depth of 5 or more was reported in south-central Virginia, northern North Carolina, in an area extending from northern Lower Michigan and Upper Michigan over eastern Kansas, and generally in the northern and middle Rocky Mountain regions and the extreme northwest.

Monthly snowfall of 10 inches, or more, was reported as follows, and in states and territories where the maximum depth was below that amount the station reporting the greatest is given:

Alabama.—Maysville, 2. *Arizona.*—Chiricahua Mountains, 12.8; Flagstaff, 11. *Arkansas.*—Conway, 6.5. *California.*—Summit, 95; Cisco, 60; Boca, 28; Emigrant Gap, 24; Truckee, 23; Edmonton, 16.5; Sisson, 15; Dunsmuir, 14. *Colorado.*—Pikes Peak, 201.3; Climax, 66; Breckenridge, 46.5; Cumbres, 40; Greenhorn, 36.5; Dillon, 32; Gold Hill, 31; Smoky Hill Mine, 26; Husted, 22.5; Castle Rock, 19; Denver, 17.8; Glen Eyrie and Pagoda (near), 17; Villa Grove, 16.5; Pueblo, 16; Ward District, 15.2; Como (near), 15; Bennet and River Bend, 13; San Luis, 12.9; Rico, 12.1; Alma, 12; Thon, 11.2; Arboles, Dumont, and Watkins, 11.

Connecticut.—Storrs, 6. *Delaware.*—Dover, 5. *District of Columbia.*—Washington, 5.5. *Florida.*—Jacksonville, Moseley Hall, Pensacola, and Tallahassee, trace. *Georgia.*—Elberton, 5.5. *Idaho.*—Kootenai, 46.5; Henrys Lake, 27; Idaho Falls,

17; Moscow, 15; Garden Valley, 10. *Illinois*.—Winnebago, 14.5; Rockford, 10.6. *Indiana*.—Mauzy, 6.2. *Indian Ter.*—Fort Supply, 15.5. *Iowa*.—Sydney, 29; College Springs, 23.5; Mechanicsville, 20.2; Clarinda, 20; Winterset, 18.5; Blakeville and Eldora, 18; Greenfield, 17.2; Atlantic and Grundy Center, 17; Hampton and Tipton, 16; Glenwood, 14.8; Belle Plaine, 14.5; Davenport, 14.3; Corning (b), 14; Indianola, 13.6; Ames (near), 13; Independence, 12.8; Des Moines and Eagle Grove, 12.5; Maxon, 12.2; Denison, Logan, and Williams, 12; Charles City, Cresco, and Osage, 11.5; Carroll, 11.2; Clinton, Dubuque, Hopkinton, and Iowa Falls, 11; Marshall and Vinton, 10.5; Ames (c), Cedar Falls, Fort Madison, and Maquoketa, 10.

Kansas.—Abilene, 29.6; Salina, 24.8; Wakefield, 24; Fort Riley, 23.4; Emporia, 20.5; Yates Center, 18.9; Lebo, 18.8; Elco and Kiowa, 18.5; Pauline, 17.5; Hutchinson, 16.8; Manhattan (c), 16.5; Havensville and Marion, 15.5; Liberal, 15; Horton, 14.5; Manhattan (a), 14; Manhattan (b) and Wichita, 13.8; Kellogg, 13.5; Gove City, 13.2; Dodge City, 13; Topeka, 12.9; Greensburg, 12.5; Minneapolis, 12.1; Concordia, Grenola, and Sterling, 12; Leavenworth, 11.6; Bucklin, 11; Oberlin, 10.8; Englewood, 10.5; Downs, 10. *Kentucky*.—Pellville, 8. *Louisiana*.—Monroe and Shreveport, trace.

Maine.—Houlton, 7.7. *Maryland*.—Darlington, 5.5. *Massachusetts*.—Monroe, 16; Cambridge (a), 14. *Michigan*.—Calumet, 44; Berrien Springs (a), 40.5; Harbor Springs, 35; Bear Lake, 34.8; Sault Ste. Marie, 33.7; Gaylord, 32; Hart, 29.5; Weldon Creek, 25; Charlevoix, 23; Allegan, 20; Boon, 18.5; Ivan and Saint Ignace, 16.5; Cheboygan, 15.8; Vandalia, 15.7; McMillan, 15.5; Benton Harbor, 14.5; Marquette, 14; Caldwell, 13; Manistee, 12.5; Grand Haven, 10.8; Parkville, 10. *Minnesota*.—Sheldon, 12.9; Wabasha, 11; Grand Meadow and Saint Charles, 10.

Mississippi.—Pontotoc, 3.5. *Missouri*.—Langdon, 19.8; Galt, 18; Oregon (b), 17; Oregon (a), 15.6; Pickering, 11.6; Bethany and Mound City, 11; Liberty, 10.8; Conception, 10.6; Platte River, 10.2. *Montana*.—Cokedale, 25; Elk Park, 20; Virginia City, 19; Fort Missoula, 18.5; Camp Poplar River, 18.2; Fort Logan, 18; Havre, 13.6; Bozeman, 13.2; Glendive, 13; Hogan, 12. *Nebraska*.—Plattsmouth, 22.5; Syracuse, 21.4; Table Rock, 19.5; Turlington, 19.1; Nebraska City, 17; Weeping Water, 16.5; Omaha, 16.4; Bookwalter, 16; De Soto, 12.9; Beatrice and David City, 12; Lincoln, 11.3; York, 11.2; Fairbury, 11.

Nevada.—Stofel, 19.5; Belmont, 14; Austin, 12.5; Empire Ranch, 11.8. *New Hampshire*.—Berlin Mills, 18.5; Lancaster, 17; Bethlehem and West Milan, 16; Stratford, 11. *New Jersey*.—Beverly, 8.2. *New Mexico*.—Fort Stanton, 12.7; Monero, 12.5; Halls Peak, 11.3; Chama, 11.2; Coolidge, 10. *New York*.—Eden Center, 46.5; Baldwinsville, 30; Le Roy, 26; Number Four, 25.6; Turin, 21.8; Rochester, 19.2; Amper sand, 18.5; Oswego, 17.4; Malone, 17.2; Ogdensburg, 16.5; Watertown, 16; Humphrey, 14.2; Buffalo, 12.9; Brookfield, 12; Potsdam, 11; Utica, 10.8; Lowville, 10.

North Carolina.—Pittsboro, 14; Littleton, Southern Pines, and Roxboro, 12; Chapel Hill and Louisburg, 11; Weldon, 10. *North Dakota*.—Fort Buford, 15.6. *Ohio*.—Harbor, 20.7; Wheeler, 18; Hillhouse, 12.7. *Oklahoma*.—Gate City, 12.5. *Oregon*.—Hood River (near), 41.5; Vernonia, 34.2; Glenora, 34; The Dalles, 32.5; Portland and Siskiyou, 29; East Portland, 25; Joseph, 21; Lafayette, 20; Sheridan, 18; Arlington, 16; Corvallis (near), 15.5; Albany (a) and Newberg, 15; Corvallis (a), McMinnville (b), and Monmouth, 14; Astoria, Corvallis (b), McMinnville (a), Salem (a), and Springfield, 13; Junction City, 11; Pendleton, 10.

Pennsylvania.—Saegerstown, 22.7; Blue Knob, 16.5; Stoyestown, 14; Somerset, 12.5; Erie, 10.5. *Rhode Island*.—Kingston (b), 10.2. *South Carolina*.—Nichols, 4.5. *South Dakota*.—Spearfish, 15.5; Oelrichs, 11.5; Fort Meade, 10.2. *Ten-*

nessee.—Rugby and Springdale, 5. *Texas*.—Amarillo, 11.2; Ochiltree, 11. *Utah*.—Provo City, 23; Salt Lake City, 19.5; Stockton, 18; Levan, 15.5; Ogden (a), 13.2; Ogden (b), 12.5; Castle Rock, 11.1. *Vermont*.—Enosburg Falls, 22; Strafford, 15; Chelsea and Jacksonville, 12; Burlington, 10.

Virginia.—Norfolk, 18.6; Cape Henry and Emporia, 12; Clarksville, 11. *Washington*.—Olympia, 51.6; Pine Hill, 34.5; Madrone, 33; Fort Simcoe, 29.5; Chelan, 29; Waterville, 27; Chehalis, 22; Fort Spokane, 20.7; Aberdeen, 20.5; Spokane, 19.9; Tacoma, 19; Clyde, 17; Rosalia, 13.3; Seattle, 12.5; Port Angeles and Walla Walla, 12.4; Silver Creek, 12; Ferry, 10. *West Virginia*.—Pleasant Hill, 14; Grafton, 13; Bluefield and Kingwood, 12; Morgantown (b), 10.

Wisconsin.—Columbus, 19.1; Portage, 15; Hillsboro, 14; Sparta (b), 13.9; Viroqua, 13.5; Reedsburg, 13.2; Oconomowoc, 13; Black River Falls and Harvey, 12.8; Watertown, 12.5; Chippewa Falls, 11.5; Depere, 11.2; Baraboo, Cadiz, Crandon, and Medford (a), 11; Embarrass and Green Bay, 10.8; Oconto and Westfield, 10.5; Beaver Dam, 10.2; Eau Claire, La Crosse, and Meadow Valley, 10. *Wyoming*.—Fort Yellowstone, 22; Evanston, 18; Lander, 16; Camp Pilot Butte and Sundance, 14; Fort Washakie, 10.4.

The first snow of the season was reported as follows: 2d, Chelan, Fort Spokane, and Waterville, Wash. 4th, Eldora, Iowa. 5th, Chiricahua Mountains, Holbrook, Natural Bridge, and Whipple Barracks, Ariz.; Independence and Keeler, Cal.; Phillipsburg, Kans.; Beatrice, Nebr.; Bloomfield, N. Mex. 6th, Sidney, Iowa; Morton, Syracuse, and Ulysses, Kans.; Springfield, Ky.; Rea, Mo.; David City, Franklin, and Syracuse, Nebr.; Albuquerque and Albert, N. Mex.; Hartley and Ochiltree, Tex.; Colfax and Moxee Valley, Wash.

7th, Cedar Falls, Glenwood, Marshall, and Mount Ayr, Iowa; Elk Falls, Kirwin, and Sedan, Kans.; Bethany, Lamar, Lamonte, Neosho, Stanberry, and Warrensburg, Mo.; Fremont, Genoa, Table Rock, Tekamah, and Weeping Water, Nebr.; Gallinas Spring, N. Mex.; Burnet, Guthrie, and Ponca, Okla. 8th, Hennepin and Palestine, Ill.; Maxon, Iowa; Fort Reno, Okla.; Elkton, S. Dak.; Pomeroy, Wash. 9th, Collinsville, Ill.; O'Neill, Nebr.; Abilene, Tex. 10th, Philo and White Hall, Ill.; Columbus, Kans.; Bowling Green and Matlock, Ky.

11th, Bisbee, Calabasas, Fort Grant, Fort Huachuca, Mount Huachuca, Payson, and Wilgus, Ariz.; Carrollton, Ky.; Fort Bayard, N. Mex.; Mangum, Okla.; Aurora and Gainesville, Tex. 12th, Mexico, Mo.; York, Nebr.; Embudo, La Luz, and Olio, N. Mex.; Silver Falls, Tex.; Clyde, Fort Simcoe, and Pine Hill, Wash. 13th, Fort Bowie, Ariz.; Logan, Iowa; Roby, Tex. 15th, Ewing, Nebr.; El Paso, Tex. 16th, Concordia and Fulton, Mo. 17th, Marshall, Mo.; Hillsboro, N. Mex.; Columbia, Kingston, London, and Rockwood, Tenn.; Fort Hancock, Tex.

18th, Union Springs and Walker Springs, Ala.; Nogales, Ariz.; Jefferson City, Mo.; Creighton, Nebr.; Rogersville, Tenn.; Burnet and Camp Pena Colorado, Tex. 19th, Florence and Maysville, Ala.; Camden, Ark.; Seaford, Del.; Ellsworth, Pana, and Peoria, Ill.; Middlesboro and Williamsburg, Ky.; Greenville, Pontotoc, University, and Water Valley, Miss.; New Palestine, Mo.; Asheville, N. C.; The Dalles and Portland, Oregon; Durham, Tex.; Aberdeen, Wash. 20th, Helena, Ark.; Catlettsburg, Ky.; Homer, La.; Taneytown, Md.; Imperial, Nebr.; Fort Sill, Okla.; Astoria, Oregon; Petersburg, Va.; Chehalis, Fort Townsend, and Vashon, Wash.; Hinton, W. Va.

21st, Shasta and Ukiah, Cal.; Albany, Oregon; Graham, Tex.; Fort Canby, Madrone, Seattle, and Tacoma, Wash.; Philippi and White Sulphur Springs, W. Va. 22d, Watseka, Ill.; Haldton, Ind. T. 23d, Albany, Ga. 25th, Gaines Landing, Ark.; Hawkinsville, Ga.; Coushatta, La.; Aberdeen and Agricultural College, Miss.; New Haven and Sarcovie, Mo.

26th, Auburn, Bermuda, Brewton, Claiborne, Gadsden, Healing Springs, Highland Home, Livingston, Lynn, Mobile, Montgomery, Tallassee, Tuscaloosa, and Warrior, Ala.; Fort Smith, Ark.; Pensacola, Fla.; Adairsville, Americus, Athens, Atlanta, Dahlonaga, Dublin, Forsyth, Lagrange, Marietta, Millen, Mill-edgeville, and Morgan, Ga.; Eufaula and Gwenddale, Ind. T.; Calhoun, Delhi, Monroe, and Shreveport, La.; Briers, Canton, Crystal Falls, Edwards, Fayette, Kosciusko, Louisville, Meridian, Moss Point, Palo Alto, Vaiden, Vicksburg, and Washington, Miss.; Bryson City, Chapel Hill, Fayetteville, Lenoir, Lillington, Littleton, Newbern, Oak Ridge, Raleigh, Smithfield, Soapstone Mount, Southport, and Wilmington, N. C.; Aiken, Camden, Cheraw, Effingham, Longshore, and Nichols, S. C.; Highland and Palestine, Tex.; Clarksville, Va. 27th, Jacksonville, Moseley Hall, and Tallahassee, Fla.; Augusta, Bainbridge, Canton, Cordele, Elberton, Fort Gaines, Hephzibah, Louisville, Piscola, Poulán, Point Peter, Savannah, and Thomasville, Ga.; Charlotte, Columbus, Douglas, Louisburg, Marion, Mount Holly, Roxbury, Salisbury, and Saxon, N. C.; Sac and Fox Agency, Okla.; Charleston, Columbia, Greenville, Saint Stephens, Simpsonville, Statesburg, Tillers Ferry, and Wateree, S. C.; Sulphur Springs, Tex.; Nottoway, Va. 30th, Anadarko, Okla. 31st, Menardville, Tex.

HAIL.

Description of the more severe hailstorms of the month is given under "Local storms." Hail was reported as follows: 3d, California and New Jersey. 5th, Arizona and California. 6th, Louisiana, Maryland, New York, and Texas. 7th, Illinois, Michigan, and South Carolina. 8th, New York, Pennsylvania, and West Virginia. 11th, Nevada and Texas. 12th, Arizona and Texas. 13th, Maryland, New Jersey, and Pennsylvania. 18th, Pennsylvania and Texas. 19th, Maryland and Mississippi. 20th, Pennsylvania. 21st, Mississippi. 25th, Colorado, Nevada, and Pennsylvania. 30th and 31st, Texas.

WINDS.

The prevailing winds for December, 1892, are shown on Chart II by arrows flying with the wind. In the middle Atlantic and New England states and the Missouri Valley the winds were generally from the northwest; in the south Atlantic states, over the Florida Peninsula, over the southern plateau region, and along the south Pacific coast, from northwest to northeast; in the east Gulf states, from northwest to north; in the west Gulf states, from north to east; in the lower lake region and on the northeast slope of the Rocky Mountains, from southwest to northwest; in the upper lake region, from southwest to west; in the extreme northwest and on the middle and southeast slopes of the Rocky Mountains, from west to north; in the upper Mississippi valley and on the California coast, from west to northwest; over the middle plateau region, from southeast to southwest; on the north Pacific coast, from east to southeast; in the Sacramento Valley, California, in the Ohio Valley and Tennessee, and over the northern plateau region, variable.

HIGH WINDS (in miles per hour).

Wind velocities of 50 miles, or more, per hour were reported at regular stations of the Weather Bureau as follows: 1st, 66, s., at Fort Canby, Wash. 2d, 56, s., at Fort Canby, Wash. 7th, 50, sw., at Chicago, Ill. 20th, 56, n., at Kittyhawk, N. C.; 54, ne., at Tatoosh Island, Wash. 21st, 84, e., at Tatoosh Island, Wash. 22d, 70, e., at Tatoosh Island, Wash.; 56, w., at Cheyenne, Wyo.; 52, se., at Fort Canby, Wash. 23d, 83, e., at Tatoosh Island, Wash.; 60, se., at San

SLEET.

Description of the more severe sleetstorms is given under "Local storms." Sleet was reported as follows: 1st, Maine, Montana, North Dakota, and Utah. 2d, Indiana. 3d, Connecticut, New Jersey, and Pennsylvania. 4th, Tennessee, Utah, and Wisconsin. 5th, Arizona, Nebraska, Utah, Washington, and Wisconsin. 6th, Connecticut, Iowa, Kansas, Maryland, Massachusetts, Nebraska, Ohio, Pennsylvania, Washington, and Wisconsin. 7th, Illinois, Iowa, Kansas, Massachusetts, Michigan, Missouri, Nebraska, and Wisconsin. 8th, North Dakota. 9th, Louisiana and Wisconsin. 10th, South Carolina.

11th, Arizona, Arkansas, Illinois, Missouri, Nebraska, and Texas. 12th, Arkansas, Kansas, Mississippi, Missouri, Ohio, Oklahoma, Oregon, and Tennessee. 13th, Arkansas, District of Columbia, Illinois, Iowa, Kansas, Maryland, Missouri, New Jersey, Ohio, Pennsylvania, Virginia, and Wisconsin. 14th, Maryland, Ohio, Pennsylvania, and Texas. 15th, Nebraska, Pennsylvania, Utah, and Washington. 16th, Illinois, Nebraska, Texas, Virginia, and West Virginia. 17th, Arkansas and Texas. 18th, Arizona, Arkansas, Maine, Montana, and Ohio. 19th, Arkansas, Maryland, Mississippi, North Carolina, Ohio, Pennsylvania, and Virginia. 20th, Arkansas, Mississippi, and Nebraska.

21st, Mississippi, Oklahoma, and Virginia. 22d, Nebraska, Oregon, and Pennsylvania. 23d, Kansas and Washington. 24th, Kansas, Nevada, and Pennsylvania. 25th, Arkansas, Illinois, Missouri, Nebraska, and Utah. 26th, Alabama, Arkansas, Florida, Georgia, Mississippi, Missouri, Montana, North Carolina, and South Carolina. 27th, Florida, Georgia, Kansas, and South Carolina. 28th, California, Georgia, Missouri, and New Mexico. 29th, Kentucky, Nebraska, Nevada, and Oklahoma. 30th, Arkansas, Illinois, Kentucky, Mississippi, and Missouri. 31st, District of Columbia, Kentucky, Missouri, Pennsylvania, and Virginia.

LOCAL STORMS.

1st-3d.—High wind and heavy rain prevailed in California; oranges were injured by wind, and rain caused floods throughout the greater part of the state.

5th.—At Salt Lake City, Utah, rain changed to snow in the early morning, and snow continued until about midnight; street car traffic was interrupted.

6th.—Tornadoes were reported in northeastern Texas and Arkansas. A tornado moved northeast east of Atlanta, Tex., between noon and 1 p. m., attended by heavy rain, small hail, thupder, and lightning. The storm had a whirling motion, and the path of destruction was 400 yards or less in width. One person was killed, 20 were injured, and 8 or ten small houses were destroyed. Two clouds, one from the northwest, the other from the southwest, united, and a black funnel-shaped cloud with a white center appeared. The track of the storm was swept clean, and the edges were well defined. Trees were twisted, and pieces of timber and articles from the wrecked houses were found on either side of the track. A